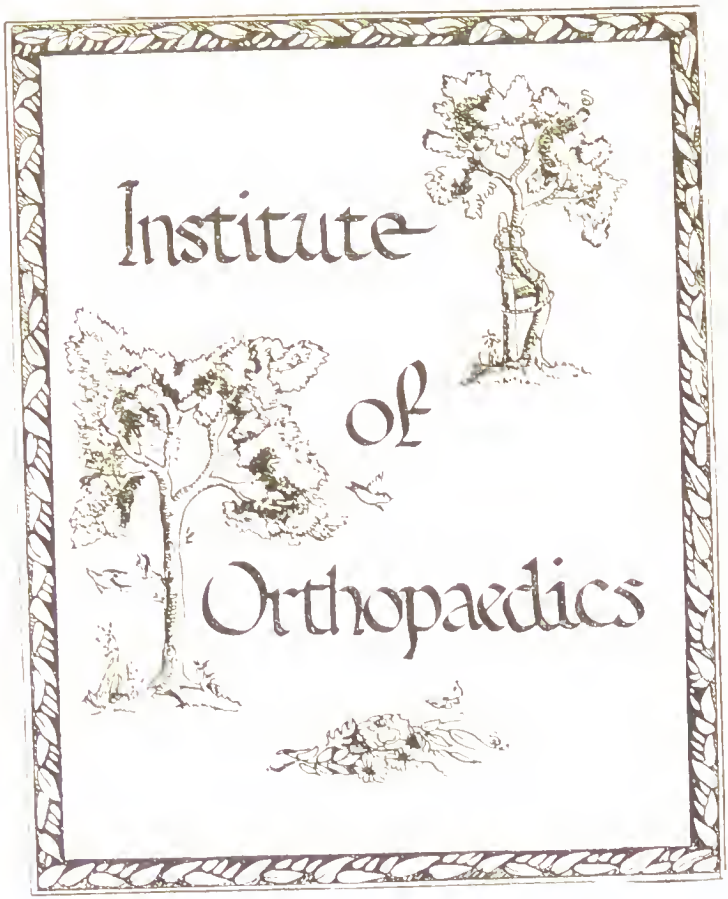
Osteo-Arthritis

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THE EARLY SYMPTOMS

AND THE

EARLY TREATMENT OF OSTEO-ARTHRITIS

(COMMONLY CALLED RHEUMATOID ARTHRITIS)

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THE EARLY SYMPTOMS

AND

THE EARLY TREATMENT

OF

OSTEO-ARTHRITIS

(COMMONLY CALLED RHEUMATOID ARTHRITIS)

WITH SPECIAL REFERENCE TO THE BATH THERMAL WATERS

BY

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INTRODUCTORY.

The following pages are offered as a contribution to the clinical history and the rational treatment of Osteo-arthritis.

The subject is one of growing interest in whatever way we study it, whether on the side of arthritis or from the stand-point of neurology. Much has become clearer within the last five years; but as yet we have only opened the door to a large storehouse of knowledge. This knowledge is of great practical utility, and an abiding conviction of this truth may be an adequate apology for my little volume.

Bath, March 4th, 1889.

THE EARLY SYMPTOMS AND THE EARLY TREATMENT OF OSTEO-ARTHRITIS.

CHAPTER I.

THE EARLY SYMPTOMS.

Much clinical ground is covered by the term rheumatism, and scarcely less by the term gout. These morbid conditions are not always easily distinguished; their etiology is sometimes obscure, and the pathological processes are a great deal alike. But our difficulties are increased if we use the term "rheumatic gout" for another morbid condition having a rough resemblance to rheumatism and gout, though differing essentially from both.

We start, therefore, with the official and distinctive nomenclature of osteo-arthritis, because it represents a thing that has a very separate history of its own. This history has characteristic

features. Some of these are so special and so easily to be seen that they furnish sure notes of the disease whenever they exist; and they are also trustworthy guides to treatment at a time when treatment may be serviceable. It is certainly an enormous gain if we are able at the earliest moment to give a firm and true diagnosis. To identify osteo-arthritis in its very cradle, and to draw sharply the lines of boundary between it and all other things which resemble it, is worth a little time and trouble; and this is the subject of the following pages.

My readers are presumed to be acquainted with the main clinical outlines of osteo-arthritis.* It is not my business here to recapitulate them. In an advanced stage of osteo-arthritis, nothing is easier than to distinguish it from anything else; but the diagnosis of an incurable disease has

* The student is referred to Sir A. Garrod's Monograph in Reynolds' *System of Medicine;* the latter part of Dr. Mitchell Bruce's article in Quain's *Dictionary of Medicine;* the chapter in Dr. Hilton Fagge's *Principles and Practice of Medicine;* Trousseau's *Clinical Medicine;* and Charcot's *Lectures.*

little glory about it, and still less utility. It is in the early stage of the disease that the confusion and the hesitation arise. If rheumatism be uppermost in our minds and frequent in our practice, we shall call all pains "rheumatic" which infest joints and muscles. Let there be the remotest history of gout in some far-away ancestor, and the doctrine of "suppressed gout" will be suggested or implied. Perhaps the patient says that she has "sprained" her wrist or her ankle, and the doctor may acquiesce in such a facile explanation of what he does not understand. Then we should keep in mind that osteo-arthritis so often follows rheumatic pyrexia that the one may seem only a postscript or appendix of the other;* but this postscript is different in substance and in form, although apparently only an increase of previous shock or damage. True gout also may begin the series of morbid

* Since writing the above, I find that this point was noticed long ago in Dr. Wilks' *Pathological Anatomy*.

changes; and it may be only after years of work and wear that the later degeneration sets in, ruining finally and completely those joints which were partially spoiled before. In our Mineral Water Hospital we see many mixed forms of this kind, in which true gout or true rheumatism began the morbid sequence; and we notice that the joints which have been actively engaged by the special craft of the patient are usually the first to show signs of arthritic degeneration.* The textural behaviour of eyes, hair, skin, and teeth will help our clinical enquiry. So that, however mixed and intertwined the arthritic phenomena may be, there are almost always certain salient features which proclaim that the "rheumatoidal" type of disease is dominant, giving a case a distinctive name and determining its proper treatment. But these "salient features" are often misunderstood, and some have been hitherto unknown.

Bath has been called a museum of living osteo-

* A fact specially insisted on by Senator, in *Ziemssen's Encyclopædia.*

arthritis; but this conveys no idea of the wealth of our clinical material, which I believe to be without a parallel of its kind. In our Mineral Water Hospital nearly half the cases belong to the osteo-arthritic group; and a crowd of "rheumatoidal" people flock to our spa from all parts of the country. Among our residential population there is no osteo-arthritis worth speaking of, nor are any of the influences present which would favour its development. But concerning the crowd of suffering pilgrims—how are we to distinguish their maladies? Popular proclamations of diagnosis are generally more loud than exact; and the recurring chime of gout, rheumatism, and rheumatic gout lacks the note of scientific precision. It is a professional duty to group our patients as soon as we can; and after a careful induction of more than a thousand cases I venture to speak of certain symptoms as connoting osteo-arthritis beyond the possibility of doubt or failure. Like and unlike all varieties of arthritis are. The likeness is visible and even obtrusive; the

differentiating points may be sometimes difficult to find, but they are plain and impossible to mistake when the clinical eye has rightly discerned them.

(*A*). Dividing in a general way all cases of osteo-arthritis into slow and quick forms—the former occupying years in its chronic ruin, the other maiming and crippling in forced marches —we find that a great number of the latter class are characterised almost from the beginning by an *increased velocity and tension of the heart's action.* The pulse may go up at once to between 80 and 90, and remain so for years. But we seldom see in Bath these twilight beginnings of the disease; people come or are sent when it is developed, and we are startled by counting a steady pulse of much tension, varying from 90 to 110. This is tolerably common. Beyond this point are cases comparatively rare, but deserving particular attention. The pulse quickens synchronously with the earliest objective signs of osteo-arthritis; there is a gradual rise until the numerical fre-frequency of 110, 115 or 120 is reached, and

there is scarcely any physiological variation during day or night. In one instance, unique within my experience, a young lady was entrusted to my care (July, 1887),* whose pulse was uniformly above 140, and as incompressible as it was rapid. The body is absolutely non-pyrexial, and the icy purple coldness of the hands is often a striking fact. There is no hæmic murmur, and there are no signs of the heart being in any way affected. The accelerated circulation is not paroxysmal; the phenomenon does not belong to that group lately described by Dr. Bristowe,† in which the rate of pulsation now and then suddenly increases, and as suddenly lessens; nor is there any sign of venous engorgement or of local œdema. It is as if the heart were running along without check; as if the inhibitory power of the pneumogastric

* By Mr. Scarron, of Wincanton. My latest news of this case leads to the belief that it may end fatally.

† *Brain*, vol. x., 1888:—"Recurrent palpitations of heart of extreme rapidity in persons otherwise healthy."

nerve were partially withdrawn, or partially neutralised by a cerebral influence which cannot at present be defined. And the cardiac tumult does not always subside even when the osteo-arthritic phenomena tame down; a quickness and an irritability continue which no medicine effectively controls.

(*B*). The *disturbance in the chromatogeneous function of the skin* has been of unfailing interest to me for some years, nor do I know why it seems to have escaped the attention of clinical observers. Concentrated as patches more or less large, the pigmentation assumes many hues, and affects many parts of the body. Across the forehead it often runs as a light bronze smear, or like a patch of chloasma; over the temporal fossæ the tint is deeper, but now and then the stains on the temples are independent patches without any pigment on the forehead at all. Under the lower eyelids the streak of colour may be very dark, shining with a metallic polish. The predominating tints on the face are lemon, orange,

and citron; the lustre varies with the angle of reflected light, and the face should be so examined as to catch the varying hues. In people of dark complexion the discolourment of the face and neck may be so swarthy as to bring recollections of supra-renal melasma; and the white luminosity of the eyes stands out in brilliant contrast. A lady of middle age, entrusted to my care by Mr. Edgar Hunt, of Colchester, resembled a Mulatto in the complexion of her face, which was partially covered with a brown seborrhœa; and the wrinkles of the forehead were white furrows parallel with so many dark ridges. In some cases the skin of the neck, all round, is soaked through as with a walnut dye, beginning at the very line at which the neck is covered up. I have been in the habit of calling this the "dirty collar pigmentation," for the part has a lamentable look as if it were unwashed.

A curious neurotic phenomenon is the coming and going of small areas like bruises, which pass through the same sequence of colours as a bruise.

There is the usual enquiry—has there been an accidental injury, or a blow so slight as to have been forgotten? None such can be recalled. We are (say) attending a patient for supposed gout or for an obstinate neuralgia of the leg; one by one the classical remedies are tried, and all alike fail; our resources are exhausted, and on our vain efforts the sufferer bestows a pitying contempt. Then, just when we least expect the riddle to be solved, our attention is called to the "odd yellow blotches" all down the limb. These "blotches" are the key to the problem. They tell that the special neuralgia before us is a symptom of something else, and that a neural arthritis will be found if we search for it in the right way. I am drawing the outlines of an actual patient sent to me by Dr. Lewis, of Folkestone; she was for a while a nosological puzzle to us both.

A bronze shadow can be often detected on the backs of the hands. Other parts of the body, quite covered from sun and air, may be darkened.

The possibility of supra-renal disease being excluded, we must remember the remote chances of the arsenical bronzing described by Dr. Cheadle, and of the thyroidal bronzing described by Dr. Drummond. Yellow circles are not uncommon across the finger joints, and especially around the nails of fingers and toes.

The deep yellow pigmentation of far-advanced osteo-arthritis is a subject which, so far as I know, has been entirely unstudied. It is a form of what has been termed *multiple xanthoma*. A maiden lady, born in 1854, was sent to Bath in July, 1884. She was kindly recommended to me by Dr. Morton, of Guildford. Much crippled in all her limbs by large and immoveable joints, she was dependent in everything on the ministrations of others. This condition began in the autumn of 1878; and towards the end of 1883, when the patient had been confined to bed for eight months, although the general health was tolerably sustained, the plantar surfaces of the feet began to grow yellow. In September, 1884, a "rash" ap-

peared on the right leg in brownish-yellow spots or patches. The spots varied in size from the smallest specks visible to the naked eye up to dots of irregular size, of one-eighth to one-fourth of an inch in diameter. In tint the spots differed much; wherever they were most separate the yellow was brightest. The predominant colour of groups of spots was dirty yellow-brown. When the finger was passed over the leg, the "rash" felt slightly raised, as if the thinnest flake of solid material were deposited in the deep part of the skin, slightly raising the epidermis.

During the ensuing winter the skin on the sole of the right foot became rough and horny, and marked here and there with the brightest yellow stain. No washing removed the yellow on the feet or the brown on the leg; but after a free application of olive oil the yellow layer on the feet and toes peeled off like a leathery skin, leaving the skin underneath quite soft and white. The brown layer on the leg came off in little flakes after the application of oil; a red rash was

then visible. The patient frequently exclaimed that the "pain brings out the yellow rash." A peculiar burning and "drawing" sensation was continually felt in the legs and feet. During the night she was at times in extreme heat with great perspirations all over the body. At a later period the nails of fingers and toes separated from their respective phalanges, and were torn and twisted from the matrix by an accumulation of dry chalky material. My patient had never had jaundice nor any other disorder of the liver; the urine was normal, and death (October, 1886) came at last from general exhaustion, although the proximate cause was a form of obstruction in the bowels.

Concerning the disseminated form of pigmentation, commonly called "freckles," I must express the opinion that there is no single point so diagnostic, so absolutely connotative of early osteo-arthritis. My observations lead to the belief that it exists in about two-thirds of the undoubted cases; cases, I mean, demonstrated to be such by

collateral phenomena. Its absence does not disprove the osteo-arthritis if the affirmative evidence from other quarters be distinctive.

But sometimes we are in honest doubt without the reproach of either ignorance or carelessness, and then the search for morbid pigment is a point of real significance. For instance, one or two attacks of rheumatic pyrexia, closely following on each other, may leave behind a state of things represented by the formula, *chronic rheumatic arthritis;* and the danger is that this may drift into the osteo-arthritic condition. How may this be determined? Determined with certainty, we say, if we find a quick pulse, smears or spots of pigment, or one or other of the marks presently to be described as fixing with perfect precision what the disease is.

The spotty pigment may be thus described:— Each freckle is a mathematically round spot,*

* To the naked eye I mean. Under even a low magnifying power Nature's roundness and angularity seem only approximative.

so well defined that it never shades off into the neighbouring skin, and it is nearly always of a blackish yellow tint. It is not in the least raised above the surrounding tissues. Its favourite haunt is on the forearms; on each forearm we commonly see from four to eight at some distance from each other, and not on the line of any special nerve-track. There is generally a spot on the ball of the thumb; they are scattered here and there on the neck; and it is rare not to find one on the back of one or both ears. They are sprinkled on the red tinge of the cheeks; and a multitude of little specks or dots may strew the forehead, scarcely visible perhaps unless the hair be well thrown back and the light good. A few lighter freckles around swollen knees tell the pathological tale. The larger the spots the less pronounced the tint. Mixed more or less at random with dashes of pigment or with areas of polished bronze are daubs and dirty sprays, as if a shower of weak Indian ink had been carelessly thrown about and allowed to dry. Or a patch of

skin not larger than a threepenny piece may look as if stained with a solution of lunar caustic. This phenomenon I have never seen in any other disease.

There is a tendency to symmetry in every form of neurotic pigmentation.

In two cases I have seen a well-defined area of "white skin" (leucoderma) on the inside of the forearm, appearing synchronously with the beginning of the osteo-arthritic lesion.

In the diagnosis of true osteo-arthritic pigmentation there are divers difficulties, and these not always small. We have to separate all congenital spots and "moles," freckles caused by sun or artificial heat, scars darkened by time, and the natural discolourments of age. There are textural degenerations which mimic disease of the skin: a nearly forgotten acne, old pimples, small nævi, and hardened dermoid patches. It is scarcely possible to be misled if we rigidly enquire into the *chronology* of the pigmentary complication. Without a question being put

people often voluntarily say that the "yellowness" and the "spots" began at the same time as the rheumatoidal symptoms. And although hospital patients have not always brilliant memories even about their own ailments, they are generally able to identify these strange "eruptions" with their pseudo-rheumatic troubles.

(*C*). *Vaso-motor disturbances* are many and interesting.

(*a*). Taking the hand of a hospital patient, a middle-aged women, extremely osteo-arthritic, I found it so wet that I said, "you have just put your hands into water." "No sir, my hands are nearly always like that." There are many degrees of this morbid sweating. It may be a mere dampness, scarcely more than that which exists in many chlorotic people whose circulation is feeble, and who always have chilblains during the winter. There is a sweating limited to the palms of the hands, the natural furrows being so many rivulets which drain the parts around.

An elderly lady who was entrusted to my care

in 1886* suffered thus :—Every morning at about two o'clock a severe neuralgic attack came on in both lower limbs; and at the same time there was such a great perspiration that the whole bed felt wet, and a thick layer of flannel was put under the thighs and legs to absorb the fluid which streamed from them.

A woman now (November, 1888) in the Mineral Water Hospital suffering from pigment deposits and a quick tense pulse (120), has her feet always covered with perspiring dew. The long trough in the situation of the vertebræ is now and then a canal of running moisture. Whatever may be the degree and extent of the morbid sweating, there is never any shivering, and no evidence of a hot stage.

(b). The trophic changes of skin are represented by local congestions technically denominated erythema, or a still more intense kindling of blood and nerves resembling erysipelas. Or

* By Mr. Patten of Ealing.

there may be evanescent blushings and blanchings, feelings as if the skin were being "scraped," and not seldom small cutaneous areas are decidedly chilled. Occasionally there is a distinct atrophy of the skin tissues.

(*b*). The specific *neural symptoms* naturally group themselves in the two divisions of sensorial and motor phenomena.

(a). The earliest prophetic note of the coming storm is pain in the muscles of the ball of the thumb. Hardly less frequent is a sharp pang on the inner side of the wrist, which I call the "ulnar area" of this specific neuralgia. These two perversions of sensation have such a valuable significance that I regard any case in which they occur as almost determined beyond debate. At a later period pain is generally more diffused and less associated with individual nerves. Thus, a middle-aged lady had a painful condition of the whole right arm, acute and paroxysmal, and pressure along the course of the ulnar nerve and over the brachial plexus was a severe trial. Now what

was the meaning of this? It was a beacon of coming evil. Already there was an enlargement of the first and second metacarpo-phalangeal articulations, and a certain discolourment of the skin; and it was clear that if our whole therapeutic thought had been addressed to the neuralgia as such, we should have missed the very point of the case. What we imagine to be a pure sciatica is now and then a note of early osteo-arthritic disease in the tarsal articulations, or perhaps in the knee. More often this specific neuralgia of the lower limb is, so to speak, pain in bulk; the sufferer clasps the thigh all round, and says that the pain is in every part of it. The old vague name of "hip-ache" was often applied when it was doubtful whether the joint or the nerves were the more affected. It is clinically certain that while we are meditating how to treat a supposed exclusive pain-storm, another and deeper pathological mischief may be creeping on unperceived.

Vaso-motor disturbances trespass upon the

province of pain, which then becomes *the* symptom complained of. Transitory feelings of great heat in the hands make them feel as if "parboiled," said one patient, or being "stung all over with nettles," said another. A very common sensation in both hands and feet is that of being "scalded," as if the textures were being submitted to a fiery ordeal. Sudden pains may run from the ends of the fingers up the arm. Severe headaches of the megrim type are a frequent form of cerebro-spinal sympathy. And the association of tubercular consumption with nodular arthritis in the same family (though not in the same children) is so remarkable, that a trustworthy clue is afforded when the nature of the arthritis is not at first quite evident.

There is a tendency to unilateralism in both vaso-motor and sensory phenomena. I asked a hospital patient to delineate her feelings in writing, and these are her words:—"Occasionally, without warning, a cold numbness passes over the left side, beginning over half the head, lasting

about a minute, leaving a perceptible paleness of the skin of that side. I have experienced it as often as twice a week. I also notice after bathing a pricking in the left front of foot and thigh, and half the top of the head is very hot, without pain." I do not prolong criticism on a subject which is more curious than helpful to diagnosis.

(b). The motorial symptoms distinctly indicative of osteo-arthritis are of high interest. It is strange what little attention they have received.

We are indebted to Dr. Ord for laying stress on the muscular atrophy. He regards this as not merely a physiological sequel of disabled joints, but as an early and synchronous symptom of equal importance with the arthritis itself.* The

* After this was written, Dr. Ord favoured me with a private communication, and said:—"In many cases the wasting is obviously far in excess of the restriction of movement, and in these wasting of the skin is often observed in addition. These are cases in which, to my mind, the osteo-arthritis is a result of either affection of the spinal cord or of its nerves. The muscular wasting is then like that of pro-

natural atrophy comes afterwards, for muscles waste and weaken when their office is gone. This twofold deterioration of muscle imparts a characteristic aspect to both upper and lower limbs. In the arms, the swollen and possibly ankylosed joints stand out in bold relief by reason of the withered strands and tendons, and from the absorption of adipose tissue. We may be reminded of the secondary contractions of chronic and incurable hemiplegia. But our business now is, not to draw a clinical history of muscle-degeneration as a general feature of osteo-arthritis, but to comment upon those special behaviours of the muscular system which tell beyond dispute what the arthritis is.

Many years ago Charcot described "shaking palsy" as a rare but specific complication of

gressive muscular atrophy. I have seen the muscular wasting precede the osteo-arthritis. In such cases I have no doubt that the wasting of muscle and skin and the osteo-arthritis are dystrophies induced by a common central nervous change."

an osteo-arthritic limb. Trousseau made merry over Charcot's doctrine, and begged to know why such a limb might not have the privilege of shaking just like any other limb? Not long since many might have joined in Trousseau's laugh; but more material has brought more knowledge. A middle-aged woman, a housekeeper, living at Dulverton, was under my care in Bath during the summer of 1888 suffering from a rapid to-and-fro spasm of the left arm. Her troubles began in September, 1887, when she got "wet through;" the left arm became painful and stiff; then followed a tremor, which gradually increased. The tremor was of the type of *paralysis agitans*, and not at all that of disseminated sclerosis. Muscular weakness developed *pari passu*. There could be no doubt of the osteo-arthritis, as the anatomical facts were there, and a tense pulse went at the rate of 104. The patient called my attention one day (one of the wettest and coldest of the last ungenial summer) to the heat of the axilla on the affected side. To the bare touch the sensa-

tion of heat was quite acute; and it was no surprise to find that the clinical thermometer gave a reading of 100 degrees, exactly 2 degrees in excess of the temperature on the other side.

In February, 1888, I was consulted by the wife (aged 51) of a retired medical man, living in Kent, who suffered from paroxysmal torticollis, accompanying an ingravescent osteo-arthritis of a slow and unobtrusive type. By a conscious effort the head could be kept in its normal position; but when the attention was diverted from needle-work or a book held before the eyes, the head swung round by a spasmodic action of the upper segment of the right trapezius muscle, until a quarter-circle of rotation had been described. This being accomplished, a mild tremor agitated the head and neck, and in a little while gentle passive movement was able to replace the head. These turns and re-turns, continually going on, were troublesome and exhausting. My patient had consulted three eminent physicians in London, one of whom (Dr. Ferrier) advised resection

of the spinal accessory nerve from the unlikelihood of anything else doing good. I ventured to counsel delay, as the association of the muscular spasm with the osteo-arthritis was evident; and might not the disturbing neural forces of both be controlled at the same time?

The patient referred to on an earlier page as having a deeply bronzed complexion, suffered from inco-ordination of the pharyngeal muscles to such an extent as to suggest to her medical attendant the possibility of glosso-labial paralysis, so great was the difficulty of swallowing. Another offshoot of pneumo-gastric trouble. Of a similar nature are the so-called gastric crises (precisely as in locomotor ataxy) which I have seen in two persons, middle-aged women, as the first phenomena of rheumatoidal disease. And I have seen one case in which the battle began with pronounced symptoms of bronchial asthma.

I pass over many interesting private records in order to relate one more case, which in the solemn annals of misdirected neurotic energy

might be called an almost riotous display of aberration. The patient, a married lady announcing herself to be 55 years of age though looking 10 years younger, had challenged the opinions of many men who are undoubted experts in "nerves," and fully understand their naughty ways. Let the sufferer (for such she truly is) narrate her own chronicle:—"I have constant pain in the abdomen, as if all the bowels were tied up and cramped like knotted cords or iron bands broken and sticking into me. There is also burning and pricking pain in what I think is the liver. With this burning there is yet a sense of coldness. All these pains are greatly increased if I am startled. The feeling is as if the bowels were raw or had ulcers. I suffer much more on movement, or when laughing or speaking much. When at the worst it seems as if the body must be divided by the tightness of these strange bands of pain, causing even the breathing to be difficult. There is a feeling of great weight, like that just before a confinement. The ribs of the right side

feel as if broken in, with numbness, or as if the whole side were in a vice. There is a numbness in both hands and arms. There is intense aching across the bottom of the spine, through the hips and down the legs, and especially in the knees; all this is worse in the evening, and lasts through the night so as to make sleep impossible. There were always noises in the head, and flushes with faintness. The first finger of the right hand occasionally becomes fixed, and upon waking from sleep one or both hands are as it were dead." Such are the salient points of a long story—a medley of motor and sensory assaults on a delicate nervous organization. The body was well nourished and even fat; there was not a wrinkle on a comparatively young and rosy face; there was, to be sure, the "worm" of domestic worry, and she was regarded as a becoming example of genteel hysteria. The authoritative diagnosis of "gouty neuralgia of the bowels" and "neuralgic rheumatism of the muscles" had afforded little satisfaction, and the treatment

built upon these vague hypotheses was barren of any benefit. With diffidence I offered a new key to unlock the clinical problem. The osteo-arthritis was there, and so was the pigmentary discolouration; and were not the myalgic and visceral disturbances part of the reflex storm set in movement by the forces which originally caused the arthritis? Might not all the phenomena depend upon a common cause? Here was a grave dynamic shaking of spinal and sympathetic systems; a nerve-quake so violent that the arthritis is thrown into the background and almost eclipsed. Not quite eclipsed, however; for there is enough of it to suggest "gout," or "suppressed gout," or perhaps casual "rheumatism." The neural nature of the arthritis had not been apprehended; hence, the symptoms taken altogether were grouped in the wrong way, and a wrong induction made.*

* Just before these pages were printed, Dr. Atkinson of Surbiton was good enough to send me for thermal treatment

In an analogous manner, waves of cerebral sympathy are stirred by a progressive osteo-arthritis. Intense supra-maxillary neuralgia, subjective perversion of taste, intense deafness, and now and then visual vertigo;—these symptoms (which I have seen)* when developed with the arthritis, may lead us to suspect its nature, or they may strengthen inferences collected from other quarters.

The first section of this little volume may fittingly close with a medical theory and a practical application.

It is probable that the term "osteo-arthritis"

a gentleman, aged 45, who exhibited a curious form of abdominal myalgia or peripheral neuritis. His case had been medically scrutinized by Dr. Gowers. The possibility of locomotor ataxy being negatived by Dr. Gowers, it seemed to me that the neuralgic symptoms were intimately connected with his undoubted osteo-arthritis. He suffered also from mental depression.

* In an elderly lady, kindly entrusted to me by Dr. Johnson, of Tunbridge Wells.

will be found to include several forms of joint-lesion. In the ordinary articular disease which is so denominated, the anatomical changes are the beginning and end of the whole thing; they are *the* morbid thing, and there is seemingly nothing else above or beyond. But my plea is that there is a large and hitherto undescribed group in which the pathology of joints is merely one sign of a profound nerve disorder. We call it conventionally an arthritis; but really the arthritis is only one neural symptom among many others, and possibly not the most important. Synthetically we do not build osteo-arthritis out of pulse, pigment, perspiration, or pain; the erring anatomy must be there; but if this be insignificant and unobtrusive it does not tell the tale. A new name seems to be wanted for a complex state in which the neural and trophic phenomena of the body are so curiously upset and confused. I refrain from speculation, because my allotted province in these pages is simply to record what I have seen and heard.

And now what is there to be said on the practical side of this matter? Much of exceeding interest. A patient (male or female) walks into our room with a slightly forward attitude, spare habit of body, and very likely a halting walk from something wrong in the lower limbs. We note the ovoid face,* the melasmic tinge around the eyes, or the shining yellow pigment on the forehead; we feel the cold wet hands and glance at the nodular fingers; and our diagnosis is made. Made securely? Quite so, and these are our reasons.

In the imaginary case now described the arthritis is assumed as its central postulate. We ask ourselves—what sort of arthritis is it? The accompanying evidence is cumulative in its force and truth. By itself the pigmentation means little, for it may be a hereditary defect or a naturally unwholesome state of the skin. By themselves local sweating and neuralgia may

* This point is of real pathognomonic interest.

mean nothing more than perverted vaso-motor force and perhaps a neuritis. Countless and varied disturbances produce an excited heart and a rapid pulse. But if one or more of these phenomena go along with the arthritis, they announce positively what the arthritis is. And conversely, the osteo-arthritis announces the nature of the companion phenomena. The tangled web of strange neurotic things is gradually unfolded; and a new code of pathological doctrine appears, wrapping up many interesting and brilliant illustrations.

But there are several pitfalls into which the unwary practitioner may stumble. A rigid enquiry will be necessary in some cases before we can exclude syphilis, gonorrhœa, and scarlet fever as possibly remote causes. There are links which bind together osteo-arthritis, tabetic arthropathy, and the arthropathy of hemiplegic limbs. The state of the knee-reflex should always be examined; but its activity or otherwise has nothing to do with the diagnosis of those commoner forms of

arthritis which concern us now. In the true osteo-arthritis I have not discovered any impairment of the knee-reflex, *quoad* the arthritic condition. And our surgical instincts will protect us against the misadventure of confounding an old injury or a partially-reduced dislocation with the sequels of a positive articular lesion.

In any stage of osteo-arthritic disease, judgment and experience are necessary to make a sound prognosis. Grafted upon a gouty or a rheumatic constitution, osteo-arthritis may run an appallingly swift course, deforming and crippling without mercy in a few months. Other cases stop suddenly at a certain point, it may be without apparent reason. And a few belie all evil omens by not only stopping in a career of ruin, but unmistakeably receding to a state of comparative health and usefulness. And now it is our business to discuss how we may promote the local and general work of amelioration, and how we may make the natural forces our friends and allies.

CHAPTER II.

THE EARLY TREATMENT OF OSTEO-ARTHRITIS.

Our plea is for early battle with a cruel and cunning enemy. It is a disease which for obstinacy and intensity has an analogy among the malignant nosologies. In one sense it is more malignant than cancer itself; for, if totally rooted out in a stage which has been called local, there may be a real end to the cancer, and neither itself nor anything like it may ever return. But osteo-arthritis is a disease which is multiple almost from the beginning, by reason of many bones and many joints; if ousted from one ground of vantage, it retreats to another only a little further away. In erratic gout and true rheumatism there is a wide scope for recovery if bony ankylosis and adhesions among the soft structures have not gone beyond a certain degree; but a

joint, big or small, wrecked by osteo-arthritic disease, is the despair of medical art according to our present knowledge. Is there any early path of safety and success? If there were no other reason for discarding the term "rheumatic gout," this would suffice—that it raises up misleading therapeutic associations. Wherever the term is current, sounds of salicin and colchicum are in the air. The traditional medicines are prescribed; and if the diseases will not obey the traditions, so much the worse for the diseases. Very true is old Selden's aphorism, that "syllables govern the world."

Our theme of treatment is bright or dark according to circumstances; very bright if we have faith in our work, and if we will take endless trouble to prevent a small spark from becoming an unmanageable flame. We have to estimate rightly the proportion of local and general treatment; study the social and hygienic surroundings of our patient, and secure the help of intelligent relatives and sensible nurses. When

the nature of a case is clear, and the gravity of the coming storm is plainly seen, it is treason to hide or to minimise it. Our prognosis must always be a guarded one, for there are many qualifications which do not for the moment appear.

I put local treatment in the foreground. Not that it is in the long run the more important; but time presses, and in this manner we can make the earliest and deepest impression. Let us study, for a moment, the problem as we see it in our Mineral Water Hospital. The joints which have been most actively engaged by the special craft of the patient, whether this be husbandry or carpentry, needlework or washing, are usually the first to show signs of arthritic degeneration. Synovial secretion has become muddy, cartilage is torn to shreds, bone is ground down to its primitive elements, and all because the mill so seldom stops; the mangle, the spade, and the needle, go drudging on without that rest which is not less physiological than moral. Threatened

joints must, therefore, be made to have more rest; but on no account to be packed up so as to lapse into idle atrophy.

In structures so near the surface of the body as joints, it is almost certain that we shall first influence an evil tendency by corrective discipline applied closely to the parts affected. Vigorously strike home at the joints themselves, is our earnest advice. One method of so-called counter-irritation is the frequent sponging with water as hot as can be borne. Paint a ring of iodine liniment around the lower part of the thigh, two fingers' breadth away from a "rheumatoidal" knee; let the ring be one inch and a half wide, and renew it every two or three days according to the delicacy of the skin. A similar ring may be painted below the knee. If a cantharides blister be applied, let it be always on the cardiac side of a joint; and the blistered surface should be allowed to heal immediately.

In the earliest stage, that of synovial distension, a joint may be kept at rest by one or more mill-

board splints, gauze tissue, and a light "cheese-cloth" bandage. The practical danger is that of letting the joint be too long at rest, whereby muscles and tendons glide insensibly into weakness and flaccidity. Avoid plaster of Paris, starch, or any sort of cage which puts a joint in prison, and hinders necessary examinations; short terms of rest may well alternate with short terms of movement and physical exercise. Pain and fatigue are our sentinels, and they cannot err. All local symptoms which denote acute inflammation must be treated according to the rules of medical surgery.

People suffering from early arthritic lesions in the lower limbs should be equipped with bandages (of domette flannel), and laced knee-caps. Sticks or crutches are necessary in the sense that they help locomotion, and support and ease the threatened joints. If the continuous electric current can ever do good, it is only in the very dawn of troubles. Dr. Althaus recommended it sixteen years ago. Many authorities are quoted

by Erb to illustrate the practical benefit of electricity in various forms of arthritis. Exudation and pain may be made to disappear, and the normal mobility of the joints restored. The subject has been discussed at length in a recent paper by Dr. Walton, of Harvard University. He points out that when muscular atrophy is a prominent feature, we must carefully distinguish the effects of lead poisoning, poliomyelitis, and neuritis. In the upper limb, Dr. Walton passes a moderate galvanic current through the wrist and fingers (medium-sized electrodes of metal covered with chamois-leather); faradism and galvanism are used for the muscles. The electrodes are placed opposite each other at different points about the wrist, and held quietly so as to allow the current to pass directly through, its direction being occasionally reversed. Each daily sitting ought to last about twenty minutes. During the past seven or eight years I have used a Lèclanche battery for swelling and weakness of the fingers. The hands are immersed in warm

water in which a little common salt is dissolved, and a current from fifteen or twenty cells is easily borne for several minutes. The process may be repeated every day for a month or more. I cannot say much for electricity in any period of the disease beyond a very early one; but muscular weakness may be relieved, and nothing can be made worse.

The Bath Thermal Waters owe much of their repute to the well-attested power of alleviating the medical group of joint-disorders known as rheumatic, gouty and osteo-arthritic. Thermal medicine is a matter of experience and tact; but beyond all doubt the machinery of thermal bathing is successful in proportion to its early use. Too often the proper time is allowed to slip by; but hope is never crushed, and in defiance of all rational laws a healing magic is supposed to exist in ores, herbs, and waters. A rude awakening is sure to follow this indolent delay. Our medical duty is clear, and consists in defining with precision what form or grade of osteo-arthritis is

curable by natural thermal means. A distinguished physician is reported to have said that he had many written reports of cases in which no benefit whatever had been received from the use of our thermal Waters. Very likely; and the number will be increased unless discrimination be exercised, and unless patients are sent here in the curable stage of their disease.

For the purpose of thermal therapeutics we may group our cases thus:—(*a*) those in which the neural symptoms are obtrusive; (*b*) the essentially arthritic and muscular group, but without ankylosis or hopeless atrophy; (*c*) the cases of ruin and despair. The last class ought not to need professional elimination; palsied helplessness speaks for itself. But in spite of every warning, poor people are sent to our Royal Mineral Water Hospital in no insignificant number whose state is past all remedy, and what are they sent for? Do we advance the quackish pretension that our benign springs are the pools of Bethesda? Whether in private or public prac-

tice we disclaim all wish to have lame and halt folk submitted to a thermal ordeal which must be a failure. There are already enough impediments to ideal success; disappointments are certain under any therapeutic economy, but we may lessen their number by a skilful choice of material.

In the tractable cases of the second group, when the arthritic storm is seen to be near, and the "dystrophy" of skin and muscles is rapidly developing, we may use the Bath Waters with the greatest confidence. Immersion of the whole body in warm or hot Alkaline Water (a Lime Sulphated Water, as Dr. John Macpherson terms it) is a generalised and tranquil method of "counter-irritation." Then as water set in motion derives new therapeutic power, so wet and dry douches are well calculated to rouse the bodily structures out of vital apathy. Wet douching (or douching during immersion) is preferable when joints are sensitive, and the action of muscles is not much impaired. Dry douching

belongs to the science and mystery of the process which we have adopted from Aix-les-Bains. It is now thoroughly established in Bath, and is practised with more refinement and gentleness than are usual abroad.

For many years the combination of dry douching and shampooing has been the meritorious distinction of Aix-les-Bains, and a host of sufferers from osteo-arthritic lesions have assembled there from all parts of the world. A large measure of success has attended this treatment. Stroking, kneading, and tapping, are the plain English words for the manual operations of the mystic creature who, at Aix, is said to have been born a medical rubber, and to whom certain secrets have been entrusted as so much tribal property. In America a great deal is thought of rotatory movements of the long muscles of the limbs. We thankfully acknowledge the efforts of Weir Mitchell, Playfair, and others, to rescue from the charlatan what is technically denominated *massage;* it has been now raised to the dignity of

a professional art. Mechano-therapy has its own rules and discipline, and we are indebted to a new observer for placing this branch of healing work on a physiological basis.

Dr. Symons Eccles tells us that the immediate effects of muscle kneading are to raise the external temperature, and at the same time to approximate the external and internal temperatures. The increased blood-pressure following muscle kneading is followed by a marked fall on the substitution of abdominal kneading. Probably, therefore, there is a diminution in the calibre and contents of the abdominal vessels, with a synchronous cooling of the internal temperature. It appears certain that after general kneading (excluding the abdomen) the quantity of blood sent to the right side of the heart is increased by the squeezing of the centripetal veins; a greater volume of blood is distributed to the lungs; a larger quantity of blood is supplied to the left side of the heart; and the increased pressure so produced within the ventricle

stimulates it to more forcible contractions. Besides these static conditions, there is an augmented interchange between the blood and the tissues, brought about by the mechanical stimulation of the local nerves.*

Such is the physiological formula of shampooing, according to Dr. Eccles. Based upon these facts, its therapeutic application is clear. Dry shampooing, practised upon patients in their own beds, is of ancient renown; but even in this form its use in Bath was, until lately, very limited. Eleven years ago I described the Continental *massage* then in vogue,† but there was scarcely any response to my appeal that it should be more largely tried in this country.

Both forms of shampooing, wet and dry, have a wide scope of utility, especially in those grades of osteo-arthritic lesion which are characterised by atrophy of skin and muscle, as described by Dr. Ord. I am satisfied of the importance of

* *British Medical Journal*, December 1st, 1888.

† *Medical Times and Gazette*, March, 1878.

shampooing in the earliest stage of progressive muscular atrophy; and when muscular wasting precedes arthritic changes, we have a group of "dystrophies" which fortunately may be met by the same line of treatment. The peripheral phenomena are within our control before a certain point is reached; and the theory is tenable that a favourable impulse may be given to the central lesion by lenient reflex influences.*

Dr. Eccles observes that the gain in surface-temperature following the muscle-kneading will be lost by radiation if the subject is not kept well covered both during and after manipulation.

* The term "peripheral" neuritis connotes an hypothesis which may be called "provisional" in the sense that it represents phenomena, concerning which we are at the door of a great discovery. Some recent lectures by Dr. Buzzard, and a paper by Dr. Bury (*Medical Chronicle*, June, 1888), are luminous in their descriptive power and suggestive force. A serious illness which I went through in 1887, correctly denominated "rheumatic neuritis," was cured mainly by the application of dry shampooing.

When this precaution is omitted the whole body-temperature will be reduced if the surface, with its greatly dilated vessels, is not protected from the effects of exposure. The effects of the shampooing are felt for three hours afterwards in the equalisation of the temperature, and for two hours in the amplitude of the pulse tracing. I suggest, however, that the dry warmth of the room in which the process is done is of most importance. No amount of clothing can keep off a "chill" if there be currents of air, humidity, or a temperature too low.

The thermal method which seems to have the germ of greatest promise combines bathing and wet douching, shampooing and dry douching, and dry shampooing at home. We should begin with simple immersion in the Bath Waters; this is the discipline of a novice, testing his physiological capabilities and vital power. After three baths in water, varying in temperature from 94 to 100 degrees (Fahr.), and not exceeding fifteen minutes in duration each time, we may order gene-

ral douching during the final two minutes of the bath. On the non-bathing days shampooing should be done in bed. Gradually the special plan of Aix-les-Bains should be substituted for the water baths. When all that is fitting is carried out, a patient may be well engaged on five days out of seven, and he will enjoy his rest on Sunday and on another day in the middle of the week. Everything depends upon the length of his stay in Bath. A resident has this great advantage—that the thermal processes can be distributed over a long time, without the weariness and pressure which come from crowding the best things into a short time. And it is better inasmuch as it is more in harmony with the slow laws of natural convalescence. But when eager people come and go and seek to push into a narrow area what ought to be spread over two or three months, our answer might be (perhaps ought to be)—such treatment is not the highest science, but is infinitely better than no treatment at all.

The countless grades of disorder and disease,

and the countless shades of constitutional tone, oblige the physician to apply his system of baths and shampooing with corresponding care. Dynamic phenomena are inconsistent with formal rules. Thermal medicine is a matter of experience and tact. A mineral water has just that value which a skilful physician knows how to elicit from it; and we learn the virtue of it solely by its effects. It is outside the province of this little volume to discuss the chemical philosophy of the Bath Thermal Waters, of which an exposition may be found in the copious literature devoted to the subject. But a medical man may perfectly know the physiology of the whole body, and perfectly know the chemistry of a mineral water, and yet not know how to apply that mineral water to any healing purpose. The one faculty does not teach or imply the other. If there be any empiricism in the matter, it is Nature's own; for the "natural compositions contrived for the benefit of mankind," wrote Dr. Oliver in 1719, "exceed all the compounds man can invent."

But, after all, only a few sick folk can ever go to Bath or Aix-les-Bains. The vast majority of osteo-arthritic sufferers must be content with the thermal appliances of their own houses. And these are not to be disparaged. Nature gives us, when she likes, an illimitable quantity of hot water, and it is a grand economy of force and trouble; but domestic resources are often all that we can command, and we should turn them to the best advantage. A sponging of the whole body with hot water every day, or a hot water bath twice a week, are within the reach of most people. I cannot recommend the so-called Turkish bath except in rare cases; it weakens the system without benefitting the local disease.

It is fortunate, too, that the craft of shampooing is now so generally understood and appreciated, that there are few towns of any size without men and women competent to practise it. The use of gymnastic apparatus (as at the Zänder Institute) should be advised and strenuously enforced.

The internal medicinal treatment of early osteo-arthritis is simple, and may be very effective. Our duty lies in resisting the main neural tendency, and in controlling (so far as possible) the specific complications. Cod-liver oil, iron and arsenic are our chief helps, not always administered at the same time, but now one thing and then another. The oil should be begun in small doses, and increased by degrees until half a pint is taken every week. The benefit is often remarkable, and in the earliest stage the disease may be checked by this means alone. At least once every day iron and arsenic ought to be given together. The following prescription has been very useful in my practice:—

℞ Ferri et Quinæ Citr., gr. x.
Liq. Sodii Arsen., ℥v.
Sodii Hypophosph., gr. x.
Glycerin., ʒ j.
Aquæ Chlorof., ad ℥ j.
M. quotidie s.

When anæmia is pronounced, it may be better

to combine arsenic with the ammonio-citrate of iron:—

℞ Ferri Ammonii-Citrat., gr. viij.
Liq. Arsenicalis, ♏v.
Sodii Iodidi, gr. iij.
Aquæ Chlorof., ad ℥ j.
M. quotidie s.

Another formula, the combination of tincture of iodine with arsenic, is valuable when the early osteo-arthritic lesion is slow, and there are chromatic changes in the skin.

Arsenic and iron are conveniently administered in pills. Two pills, containing one-twelfth of a grain of arseniate of soda and six or seven grains of reduced iron, should be taken twice a day.

Local or general sweating is relieved by strychnia and belladonna. It is important to lessen this symptom; and if we can do so, there is not a more welcome sign that the disease is being checked.

Nothing very encouraging can be predicated of our therapeutic efforts to diminish quickness

and tension of pulse. All that can be admitted is that the inhibitory function of the pneumogastric nerve may be partially restored when the general nerve-tone is restored, and not before. The so-called cardiac tonics have little or no effect, and a remedial attempt of this sort is simply beginning at the wrong end. Irritability of circulation may go on even after a threatened disease of joints has "tamed down."*

The neuralgic complications of osteo-arthritis suggest quinine. By itself quinine is of little utility; but a combination of quinine and salicin and iodide of sodium may do what neither drug can do alone. But cod-liver oil is *facile princeps* here, and should be pushed boldly. A favourable change may be inferred if pain decidedly moderates, especially at night.

* Some enlargement of the thyroid gland is not uncommon in poor people who have osteo-arthritis, with a tense and throbbing pulse. I have sometimes given *strophanthus* for weeks without any perceptible result.

We need, however, more direct and decisive anodynes. In a vast number of osteo-arthritic cases there is local pain, more or less severe, and marked by rhythmic fluctuations. I have spoken of the "scalding" and "burning" wrists and hands, and special remedies must be prescribed when sleep is driven away by downright suffering. The analgesic properties of hydrate of chloral are not so well known or recognised as they ought to be. Among my patients in the Mineral Water Hospital the sleeplessness which is caused by pain is mercifully abated by a nightly dose of chloral, varying from twelve to twenty-four grains. It is efficient, harmless, and brings brighter and more restful days. Nor does the chloral require to be increased beyond a moderate measure. In private practice there are more cases in which chloral fails as an analgesic, and morphine has to be given. In our early treatment hypodermic medication is not to be thought of. Except as an economic help to chloral, the bromide salts are comparatively inert.

Countless hygienic rules may be drawn up, and it will be a happy chance if our patient obeys half of them. Rooms well ventilated night and day; the steady morning and evening walk out of doors to keep muscles and joints from stagnation, and to promote the "metabolism" of waste matter from the body; plenty of sun and sea; clothing adapted to the ever-shifting stress of weather; and meals of varied and well-cooked food.

Climate has its soothing and healing value. But although a patient may be able to afford an ideal treatment, we say unhesitatingly that there should be no going away into any part of Europe during the depth of Winter. To this rule I would allow the exception of certain spots on the Mediterranean seaboard in a mild winter; but who can reckon upon that? From November to the end of February, home comforts and home society are infinitely better than an enforced sojourn in almost any part of our own Continent. Without the gentle lenitives of a warm house and

a well-equipped hearth, the miseries of cold and rain and wind are acute indeed. And where can we find perfect sanitation abroad ? When March has well begun, our instincts will teach us to obey Mr. Ruskin's good advice, and keep out of the "search of the glacier wind," and be as much as possible in the "rays of the rare sunshine." In the early spring these conditions can be best fulfilled by a residence of about ten weeks in the South of Europe. From the end of May to the end of October, are there many climates better than that of the South of England ?

Two other questions may be raised, each requiring deliberate consideration. (*a*) A subtropical sea voyage; and (*b*) a winter residence in Calcutta or Egypt. It is noteworthy that what we call the prophylaxis of cerebral and pulmonary tubercle is also the most rational way of warding off the diathetic state which leads to osteo-arthritis.*

* In 1881, Sir Andrew Clark kindly entrusted to my care

In few diseases is time so irrevocable. Our pity should be moved when beholding the almost monumental effigies of once bright and active young men and women, now laid on sofas or Ilkley couches, and dependent for the humblest office on the ministry of others. It is a reproach to medical art if any curable disease be permitted to run into an incurable form. I venture to plead that the proper treatment of osteo-arthritis consists in seizing the right threads at the very beginning, and in holding them with a fighting

a young lady, in whose case an "ideal treatment," extending over years, could be fully carried out. The osteo-arthritis was developing rapidly; but at the end of 1886, when I last heard of her, the improvement was so great that life was enjoyable and useful. Now many like cases in young people are still called "rheumatic-gout," and treated most disastrously. I refer my readers to an admirable paper by Sir Dyce Duckworth (*St. Bartholomew's Hospital Reports*, 1880) for an account of the morbid condition which has the sole title to be called "rheumatic-gout." In a precise nosology there is no rival in the field.

attitude to the very end. And it will be a natural conclusion of my argument if I add that the means should be always adapted to our aims, which must vary with the varying conditions of sex, temperament, family inheritance, and age.

APPENDIX.

The following note has been sent to me by my friend, Major Davis, City Architect:—"The very large volume of Nitrogen and Carbonic acid gas which is given off in the King's bath, has not been utilised in any way. It is proposed to secure this gas and administer it in the bath, either in the King's bath or in one of the private baths. Gas permeating the bath is a valuable stimulant to the bather. In addition to this, baths will be given aerated with artificially-prepared carbonic acid gas. Its presence will help the solution of the chemical constituents of the Water, which are quickly precipitated when the Mineral Water is undisturbed for any length of time."

BY THE SAME AUTHOR.

*The Pathology and Treatment of Ulcers and Cu-*taneous Diseases of the Lower Limbs. London, Messrs. Churchill, 1868.

Therapeutic Means for the Relief of Pain. Being the Essay for which the Fothergillian Gold Medal of the Medical Society of London was awarded in 1874. London, Messrs. Macmillan, 1875.

The Bath Thermal Waters: Historical, Social, Medical. London and Bath, Messrs. Churchill and W. Lewis, 1877.